

Amendment and Response Under 37 C.F.R. §1.116 - Expedited Examining Procedure

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Serial No.: 09/772,598

Confirmation No.: 2967

Filed: January 30, 2001

For: CRYSTALLIZATION AND STRUCTURE DETERMINATION OF STAPHYLOCOCCUS AUREUS NAD
SYNTHETASE**Amendments to the Claims**

This listing of claims replaces all prior versions, and listings, of claims in the above-identified application:

1-38. (Canceled)**39. (Previously Presented)** A crystal of *Staphylococcus aureus* nicotinamide adenine dinucleotide (*S. aureus* NAD) synthetase having the monoclinic space group symmetry P2₁.**40. (Previously Presented)** A crystal of *Staphylococcus aureus* nicotinamide adenine dinucleotide (*S. aureus* NAD) synthetase comprising a unit cell having dimensions of a, b, and c; wherein a is about 40Å to about 60Å, b is about 90Å to about 120Å, and c is about 80Å to about 110Å; and wherein $\alpha = \gamma = 90^\circ$ and β is about 80° to about 120° .**41. (Previously Presented)** A crystal of *Staphylococcus aureus* nicotinamide adenine dinucleotide (*S. aureus* NAD) synthetase comprising atoms arranged in a spatial relationship represented by the structure coordinates listed in Table 1.**42. (Previously Presented)** A crystal of *Staphylococcus aureus* nicotinamide adenine dinucleotide (*S. aureus* NAD) synthetase having amino acid sequence SEQ ID NO:1.**43. (Previously Presented)** A crystal of *Staphylococcus aureus* nicotinamide adenine dinucleotide (*S. aureus* NAD) synthetase having amino acid sequence SEQ ID NO:1, with the proviso that at least one methionine is replaced with selenomethionine.**44. (Currently Amended)** A method for crystallizing *Staphylococcus aureus* nicotinamide adenine dinucleotide (*S. aureus* NAD) synthetase comprising:

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providing purified *S. aureus* NAD synthetase at a concentration of about 1 mg/ml to about 50 mg/ml; and

forming a crystal of *S. aureus* NAD synthetase from a solution comprising about 18 [[5]]% by weight to about 22 [[50]]% by weight polyethylene glycol (PEG) 1500 and about 0% by weight to about 20% by weight dimethyl sulfoxide (DMSO),

wherein the crystal has the monoclinic space group symmetry P2₁.

45. (Canceled)**46. (Currently Amended)** A method for crystallizing *Staphylococcus aureus* nicotinamide adenine dinucleotide (*S. aureus* NAD) synthetase comprising:

providing purified *S. aureus* NAD synthetase at a concentration of about 1 mg/ml to about 50 mg/ml; and

forming a crystal of *S. aureus* NAD synthetase from a solution comprising about 18 [[5]]% by weight to about 22 [[50]]% by weight polyethylene glycol (PEG) 1500 and about 0% by weight to about 20% by weight dimethyl sulfoxide (DMSO),

wherein the crystal comprises a unit cell having dimensions of a, b, and c; wherein a is about 40Å to about 60Å, b is about 90Å to about 120Å, and c is about 80Å to about 110Å; and wherein $\alpha = \gamma = 90^\circ$ and β is about 80° to about 120° .

47. (Canceled)**48. (Currently Amended)** A method for crystallizing *Staphylococcus aureus* nicotinamide adenine dinucleotide (*S. aureus* NAD) synthetase comprising:

providing purified *S. aureus* NAD synthetase at a concentration of about 1 mg/ml to about 50 mg/ml; and

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forming a crystal of *S. aureus* NAD synthetase from a solution comprising about 18 [[5]]% by weight to about 22 [[50]]% by weight polyethylene glycol (PEG) 1500 and about 0% by weight to about 20% by weight dimethyl sulfoxide (DMSO),

wherein the crystal comprises atoms arranged in a spatial relationship represented by the structure coordinates listed in Table 1.

49. (Canceled)**50. (Currently Amended) A method for crystallizing *Staphylococcus aureus* nicotinamide adenine dinucleotide (*S. aureus* NAD) synthetase comprising:**

providing purified *S. aureus* NAD synthetase at a concentration of about 1 mg/ml to about 50 mg/ml; and

forming a crystal of *S. aureus* NAD synthetase from a solution comprising about 18 [[5]]% by weight to about 22 [[50]]% by weight polyethylene glycol (PEG) 1500 and about 0% by weight to about 20% by weight dimethyl sulfoxide (DMSO),

wherein the crystal of *S. aureus* NAD synthetase has an *S. aureus* NAD synthetase amino acid sequence SEQ ID NO:1.

51. (Canceled)**52. (Currently Amended) A method for crystallizing *Staphylococcus aureus* nicotinamide adenine dinucleotide (*S. aureus* NAD) synthetase comprising:**

providing purified *S. aureus* NAD synthetase at a concentration of about 1 mg/ml to about 50 mg/ml; and

forming a crystal of *S. aureus* NAD synthetase from a solution comprising about 18 [[5]]% by weight to about 22 [[50]]% by weight polyethylene glycol (PEG) 1500 and about 0% by weight to about 20% by weight dimethyl sulfoxide (DMSO),

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SYNTHETASE*

wherein the crystal of *S. aureus* NAD synthetase has an *S. aureus* NAD synthetase amino acid sequence SEQ ID NO:1, except that at least one methionine is replaced with selenomethionine.

53. (Canceled)

54. (Previously Presented) A crystal of *Staphylococcus aureus* nicotinamide adenine dinucleotide (*S. aureus* NAD) synthetase, wherein the crystal diffracts x-rays to a resolution of 1.5Å to 3Å.

55. (Previously Presented) The crystal of claim 54 wherein the resolution is at least 2.2Å.

56-57. (Canceled)

58. (Previously Presented) A crystal of *Staphylococcus aureus* nicotinamide adenine dinucleotide (*S. aureus* NAD) synthetase, wherein the crystal has at least one dimension of 0.15-0.8 mm.

59. (Previously Presented) The crystal of claim 58 having dimensions of 0.15-0.8 mm x 0.2 mm x 0.05-0.1 mm.

60. (Previously Presented) The crystal of claim 58 wherein the crystal diffracts x-rays to a resolution of 1.5Å to 3Å.

61. (Previously Presented) The crystal of claim 60 wherein the resolution is at least 2.2Å.

62-66. (Canceled)